

**What is claimed is:**

1. A method for enhancing the transport of an active agent through mammalian skin, comprising:

- exposing the skin to ultrasound, and
- applying an active agent to the skin,

wherein the step of applying an active agent to the skin comprises injecting the active agent into the skin, and wherein the active agent comprises at least one of Vitamin C, Vitamin E, Vitamin A, Vitamin K, Vitamin F, Retin A (Tretinoin), Adapalene, Retinol, Hydroquinone, Kojic acid, a growth factor, echinacea, an antibiotic, an antifungal, an antiviral, a bleaching agent, an alpha hydroxy acid, a beta hydroxy acid, salicylic acid, antioxidant triad compound, a seaweed derivative, a salt water derivative, an antioxidant, a phytoanthocyanin, a phytonutrient, a botanical product, a herbaceous product, a hormone, an enzyme, a mineral, a genetically engineered substance, a cofactor, a catalyst, an antiaging substance, insulin, trace elements, minerals, Rogaine, a hair growth stimulating substance, a hair growth inhibiting substance, a dye, a natural or synthetic melanin, a metalloproteinase inhibitor, proline, hydroxyproline, an anesthetic substance.

2. A method for enhancing the transport of an active agent through mammalian skin, wherein the skin comprises a stratum corneum, the method comprising:

- exposing the skin to ultrasound,

applying an active agent to the skin, and

modifying at least portion of the stratum corneum substantially prior to the step of exposing the skin to ultrasound, wherein the step of modifying at least a portion of the stratum corneum comprises at least one of the steps of:

removing at least a follicular plug from the stratum corneum,

removing at least skin debris from the stratum corneum, and

removing at least a portion of the stratum corneum,

wherein the active agent comprises at least one of human fibroblasts, a preparation containing human fibroblasts, Vitamin C, Vitamin E, Vitamin A, Vitamin K, Vitamin F, Retin A (Tretinoin), Adapalene, Retinol, Hydroquinone, Kojic acid, a growth factor, echinacea, an antibiotic, an antifungal, an antiviral, a bleaching agent, an alpha hydroxy acid, a beta hydroxy acid, salicylic acid, antioxidant triad compound, a seaweed derivative, a salt water derivative, an antioxidant, a phytoanthocyanin, a phytonutrient, a botanical product, a herbaceous product, a hormone, an enzyme, a mineral, a genetically engineered substance, a cofactor, a catalyst, an antiaging substance, insulin, trace elements, minerals, Rogaine, a hair growth stimulating substance, a hair growth inhibiting substance, a dye, a natural or synthetic melanin, a metalloproteinase inhibitor, proline, hydroxyproline, an anesthetic substance.

3. A method for enhancing the transport of an active agent through mammalian skin, wherein the skin comprises a stratum corneum, the method comprising:

exposing the skin to ultrasound,  
applying an active agent to the skin, and  
modifying at least portion of the stratum corneum substantially prior to the  
step of exposing the skin to ultrasound, wherein the step of modifying at least a  
portion of the stratum corneum comprises at least one of the steps of:

removing at least a follicular plug from the stratum corneum,  
removing at least skin debris from the stratum corneum, and  
removing at least a portion of the stratum corneum,

wherein the stratum corneum is characterized by a structure, a function, a  
thickness and a permeability and wherein the step of modifying at least a portion  
of the stratum corneum comprises at least one of the steps of stripping,  
removing, thinning and diminishing at least one of the structure, function,  
thickness and permeability of the stratum corneum by at least one of a  
mechanical, abrasive, photo acoustic, ablative, thermal, chemical, abrasive and  
enzymatic method.

4. A method for enhancing the transport of an active agent through  
mammalian skin, wherein the skin comprises a stratum corneum, the method  
comprising:

exposing the skin to ultrasound,  
applying an active agent to the skin, and

modifying at least portion of the stratum corneum substantially prior to the step of exposing the skin to ultrasound, wherein the step of modifying at least a portion of the stratum corneum comprises at least one of the steps of:

- removing at least a follicular plug from the stratum corneum,
- removing at least skin debris from the stratum corneum, and
- removing at least a portion of the stratum corneum,

wherein the step of modifying at least a portion of the stratum corneum comprises at least one of the steps of solvent stripping, tape stripping, scrubbing, laser ablation, laser vaporization, chemical peeling, micro dermabrasion, and laser treatment using a high peak power, short pulse duration laser.

5. A method for enhancing the transport of an active agent through mammalian skin, wherein the skin comprises a stratum corneum, the method comprising:

- exposing the skin to ultrasound,
- applying an active agent to the skin, and

modifying at least portion of the stratum corneum substantially prior to the step of exposing the skin to ultrasound, wherein the step of modifying at least a portion of the stratum corneum comprises at least one of the steps of:

- removing at least a follicular plug from the stratum corneum,
- removing at least skin debris from the stratum corneum, and
- removing at least a portion of the stratum corneum,

wherein the step of modifying at least a portion of the stratum corneum comprises the step of applying an enzyme peel.

6. The method of claim 5, wherein the enzyme peel is formulated to remove primarily dead stratum corneum cells.

7. A method for enhancing the transport of an active agent through mammalian skin, comprising:

exposing the skin to ultrasound, and

applying an active agent to the skin,

wherein the step of applying an active agent to the skin comprises at least one of inserting, injecting, and placing fibroblasts into the skin associated with a collagen, a synthetic matrix or a bioengineered matrix.

8. The method of claim 7, wherein the fibroblasts comprise at least one of fetal, autologous, donor, and genetically engineered fibroblasts.

9. The method of claim 7, wherein the collagen comprises fetal collagen.

10. The method of claim 7, comprising the step of exposing the skin to at least one of light, ultrasound, and a topical agent substantially subsequent to the step of at least one of inserting, injecting, and placing fibroblasts into the skin.

11. The method of claim 10, wherein the topical agent comprises collagen.

12. A method for enhancing the transport of an active agent through mammalian skin, wherein the skin comprises a stratum corneum, the method comprising:

exposing the skin to ultrasound,

applying an active agent to the skin, and

modifying at least portion of the stratum corneum substantially prior to the step of exposing the skin to ultrasound, wherein the step of modifying at least a portion of the stratum corneum comprises at least one of the steps of:

removing at least a follicular plug from the stratum corneum,

removing at least skin debris from the stratum corneum, and

removing at least a portion of the stratum corneum, and

at least one of inserting, injecting, and placing fibroblasts into the skin associated with a collagen, a synthetic matrix or a bioengineered matrix.

13. The method of claim 12, wherein the fibroblasts comprise at least one of fetal, autologous, donor, and genetically engineered fibroblasts.

14. The method of claim 12, wherein the collagen comprises fetal collagen.

15. The method of claim 12, comprising the step of exposing the skin to at least one of light, ultrasound, and a topical agent substantially subsequent to the step of at least one of inserting, injecting, and placing fibroblasts into the skin.

16. The method of claim 15, wherein the topical agent comprises collagen.

17. A method for enhancing the transport of an active agent through mammalian skin, comprising:

exposing the skin to light,

exposing the skin to ultrasound, and

applying an active agent to the skin, wherein the step of applying an active agent to the skin comprises injecting the active agent into the skin.

18. The method of claim 17, wherein the active agent comprises human fibroblasts.

19. The method of claim 17, wherein the active agent comprises a preparation containing human fibroblasts.

20. A method for enhancing the transport of an active agent through mammalian skin, wherein the skin comprises a stratum corneum, the method comprising:

exposing the skin to light,  
exposing the skin to ultrasound,  
applying an active agent to the skin, and  
modifying at least portion of the stratum corneum substantially prior to at least one of the steps of exposing the skin to light and exposing the skin to ultrasound, wherein the step of modifying at least a portion of the stratum corneum comprises at least one of the steps of:

removing at least a follicular plug from the stratum corneum,  
removing at least skin debris from the stratum corneum, and  
removing at least a portion of the stratum corneum.

21. The method of claim 17, wherein the active agent comprises at least one of Vitamin C, Vitamin E, Vitamin A, Vitamin K, Vitamin F, Retin A (Tretinoin), Adapalene, Retinol, Hydroquinone, Kojic acid, a growth factor, echinacea, an antibiotic, an antifungal, an antiviral, a bleaching agent, an alpha hydroxy acid, a beta hydroxy acid, salicylic acid, antioxidant triad compound, a seaweed derivative, a salt water derivative, an antioxidant, a phytoanthocyanin, a phytonutrient, a botanical product, a herbaceous product, a hormone, an enzyme, a mineral, a genetically engineered substance, a cofactor, a catalyst, an antiaging substance, insulin, trace elements, minerals, Rogaine, a hair growth stimulating substance, a hair growth inhibiting substance, a dye, a natural or synthetic melanin, a metalloproteinase inhibitor, proline, hydroxyproline, an anesthetic substance.



22. The method of claim 20, wherein the active agent comprises at least one of human fibroblasts, a preparation containing human fibroblasts, Vitamin C, Vitamin E, Vitamin A, Vitamin K, Vitamin F, Retin A (Tretinoin), Adapalene, Retinol, Hydroquinone, Kojic acid, a growth factor, echinacea, an antibiotic, an antifungal, an antiviral, a bleaching agent, an alpha hydroxy acid, a beta hydroxy acid, salicylic acid, antioxidant triad compound, a seaweed derivative, a salt water derivative, an antioxidant, a phytoanthocyanin, a phytonutrient, a botanical product, a herbaceous product, a hormone, an enzyme, a mineral, a genetically engineered substance, a cofactor, a catalyst, an antiaging substance, insulin, trace elements, minerals, Rogaine, a hair growth stimulating substance, a hair growth inhibiting substance, a dye, a natural or synthetic melanin, a metalloproteinase inhibitor, proline, hydroxyproline, an anesthetic substance.

23. The method of claim 20, wherein the stratum corneum is characterized by a structure, a function, a thickness and a permeability and wherein the step of modifying at least a portion of the stratum corneum comprises at least one of the steps of stripping, removing, thinning and diminishing at least one of the structure, function, thickness and permeability of the stratum corneum by at least one of a mechanical, abrasive, photo acoustic, ablative, thermal, chemical, abrasive and enzymatic method.

24. The method of claim 20, wherein the step of modifying at least a portion of the stratum corneum comprises at least one of the steps of solvent stripping, tape stripping, scrubbing, laser ablation, laser vaporization, chemical peeling, micro dermabrasion, and laser treatment using a high peak power, short pulse duration laser.

25. The method of claim 20, wherein the step of modifying at least a portion of the stratum corneum comprises the step of applying an enzyme peel.

26. The method of claim 25, wherein the enzyme peel is formulated to remove primarily dead stratum corneum cells.

27. The method of claim 17, comprising  
at least one of inserting, injecting, and placing fibroblasts into the skin associated with a collagen, a synthetic matrix or a bioengineered matrix.

28. The method of claim 27, wherein the fibroblasts comprise at least one of fetal, autologous, donor, and genetically engineered fibroblasts.

29. The method of claim 27, wherein the collagen comprises fetal collagen.

30. The method of claim 27, comprising the step of exposing the skin to at least one of light, ultrasound, and a topical agent substantially subsequent to the step of at least one of inserting, injecting, and placing fibroblasts into the skin.

31. The method of claim 30, wherein the topical agent comprises collagen.

32. The method of claim 20, comprising at least one of inserting, injecting, and placing fibroblasts into the skin associated with a collagen, a synthetic matrix or a bioengineered matrix.

33. The method of claim 32, wherein the fibroblasts comprise at least one of fetal, autologous, donor, and genetically engineered fibroblasts.

34. The method of claim 32, wherein the collagen comprises fetal collagen.

35. The method of claim 32, comprising the step of exposing the skin to at least one of light, ultrasound, and a topical agent substantially subsequent to the step of at least one of inserting, injecting, and placing fibroblasts into the skin.

36. The method of claim 35, wherein the topical agent comprises collagen.

37. A method for enhancing the transport of an active agent through mammalian skin, comprising:

exposing the skin to light, and

applying an active agent to the skin, wherein the step of applying an active agent to the skin comprises injecting the active agent into the skin.

38. The method of claim 37, wherein the active agent comprises human fibroblasts.

39. The method of claim 37, wherein the active agent comprises a preparation containing human fibroblasts.

40. A method for enhancing the transport of an active agent through mammalian skin, wherein the skin comprises a stratum corneum, the method comprising:

exposing the skin to light,

applying an active agent to the skin, and

modifying at least portion of the stratum corneum substantially prior to the step of exposing the skin to light, wherein the step of modifying at least a portion of the stratum corneum comprises at least one of the steps of:

removing at least a follicular plug from the stratum corneum,

removing at least skin debris from the stratum corneum, and

removing at least a portion of the stratum corneum.

41. The method of claim 37, wherein the active agent comprises at least one of Vitamin C, Vitamin E, Vitamin A, Vitamin K, Vitamin F, Retin A (Tretinoin), Adapalene, Retinol, Hydroquinone, Kojic acid, a growth factor, echinacea, an antibiotic, an antifungal, an antiviral, a bleaching agent, an alpha hydroxy acid, a beta hydroxy acid, salicylic acid, antioxidant triad compound, a seaweed derivative, a salt water derivative, an antioxidant, a phytoanthocyanin, a phytonutrient, a botanical product, a herbaceous product, a hormone, an enzyme, a mineral, a genetically engineered substance, a cofactor, a catalyst, an antiaging substance, insulin, trace elements, minerals, Rogaine, a hair growth stimulating substance, a hair growth inhibiting substance, a dye, a natural or synthetic melanin, a metalloproteinase inhibitor, proline, hydroxyproline, an anesthetic substance.

42. The method of claim 40, wherein the active agent comprises at least one of human fibroblasts, a preparation containing human fibroblasts, Vitamin C, Vitamin E, Vitamin A, Vitamin K, Vitamin F, Retin A (Tretinoin), Adapalene, Retinol, Hydroquinone, Kojic acid, a growth factor, echinacea, an antibiotic, an antifungal, an antiviral, a bleaching agent, an alpha hydroxy acid, a beta hydroxy acid, salicylic acid, antioxidant triad compound, a seaweed derivative, a salt water derivative, an antioxidant, a phytoanthocyanin, a phytonutrient, a botanical product, a herbaceous product, a hormone, an enzyme, a mineral, a genetically

engineered substance, a cofactor, a catalyst, an antiaging substance, insulin, trace elements, minerals, Rogaine, a hair growth stimulating substance, a hair growth inhibiting substance, a dye, a natural or synthetic melanin, a metalloproteinase inhibitor, proline, hydroxyproline, an anesthetic substance.

43. The method of claim 40, wherein the stratum corneum is characterized by a structure, a function, a thickness and a permeability and wherein the step of modifying at least a portion of the stratum corneum comprises at least one of the steps of stripping, removing, thinning and diminishing at least one of the structure, function, thickness and permeability of the stratum corneum by at least one of a mechanical, abrasive, photo acoustic, ablative, thermal, chemical, abrasive and enzymatic method.

44. The method of claim 40, wherein the step of modifying at least a portion of the stratum corneum comprises at least one of the steps of solvent stripping, tape stripping, scrubbing, laser ablation, laser vaporization, chemical peeling, micro dermabrasion, and laser treatment using a high peak power, short pulse duration laser.

45. The method of claim 40, wherein the step of modifying at least a portion of the stratum corneum comprises the step of applying an enzyme peel.

46. The method of claim 45, wherein the enzyme peel is formulated to remove primarily dead stratum corneum cells.

47. The method of claim 37, comprising  
at least one of inserting, injecting, and placing fibroblasts into the skin associated with a collagen, a synthetic matrix or a bioengineered matrix.

48. The method of claim 47, wherein the fibroblasts comprise at least one of fetal, autologous, donor, and genetically engineered fibroblasts.

49. The method of claim 47, wherein the collagen comprises fetal collagen.

50. The method of claim 47, comprising the step of exposing the skin to at least one of light, ultrasound, and a topical agent substantially subsequent to the step of at least one of inserting, injecting, and placing fibroblasts into the skin.

51. The method of claim 50, wherein the topical agent comprises collagen.

52. The method of claim 40, comprising  
at least one of inserting, injecting, and placing fibroblasts into the skin associated with a collagen, a synthetic matrix or a bioengineered matrix.

53. The method of claim 52, wherein the fibroblasts comprise at least one of fetal, autologous, donor, and genetically engineered fibroblasts.

54. The method of claim 52, wherein the collagen comprises fetal collagen.

55. The method of claim 52, comprising the step of exposing the skin to at least one of light, ultrasound, and a topical agent substantially subsequent to the step of at least one of inserting, injecting, and placing fibroblasts into the skin.

56. The method of claim 55, wherein the topical agent comprises collagen.